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ROCKVILLE, MD 20850-3164

EXAMINER

CHRISTMAN, KATHLEEN M

ART UNIT	PAPER NUMBER
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3713

DATE MAILED: 01/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/836,165

Applicant(s)

HAYNES ET AL.

Examiner

Kathleen M Christman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 18-25, 37, 39 and 40 is/are rejected.
- 7) ☒ Claim(s) 5-17, 26-36, 38 and 41-44 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2-4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

## DETAILED ACTION

### *Information Disclosure Statement*

1. The information disclosure statement filed 08/09/2002 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. A copy of the U.S. Patent number 5,451,169 has not been provided. A search of the patent number resulted in a patent issued to Corbett, III et al and not Black as cited on the IDS. The examiner is uncertain as to which of these fields includes the error and has not considered the reference. All other citations on the IDS have been considered.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 19-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not clearly set for the how "the semantic space is derived from latent semantic analysis using a latent semantic analysis algorithm", the semantic space derived from HAL, or the semantic space derived from EM.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3, 20 and 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d). The limitations of "HAL" and "EM" in claims 20 and 21 lack a clear definition in the specification.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-4, 19, 19, 22-25, 37, 39, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fontana et al (US 6,361,326 B1) in view of Berman (US 6,461,166 B1).

With regards to claims 1 and 18, Fontana et al teaches a method and system for teaching thinking skills which includes: at least one domain of course accessible by a student via a computer system, said at least one domain of discourse including a plurality of instructional passages (sources as referred to by Fontana), wherein the instructional passages are available for the student to read via a

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monitor of the computer system (see col. 10: 49-57); immediate feedback data capable of being provided via the computer system and including an indicator reflective of the student's performance and includes the identity of which of said instructional passages the student should read next ((the guiding prompts and next area suggestions, see col. 2: 67 – col. 3: 8). A graphical user interface (claims 4) is taught in at least Figure 9 and its description.

Fontana does not explicitly teach that the student submits a summary of one of the instructional passages, as recited in claims 1 and 18. However, Fontana et al does teach that one of the thinking skills evaluated and trained in "analyzing for content meaning and point of view", see col. 13: - col. 14: 5. The applicant admits at page 3, line 24 through page 4, line 3 of the original filed specification: "There is significant agreement amongst educators and researchers that a student's ability to produce a good summary of lesson text is superior to other forms of assessment in evaluating a student's reading comprehension and that learning to write good summaries of lesson text is an effective way to develop reading comprehension strategies and skills". The reading comprehension skills referred to by applicant are the same as those skills described in the cited section of Fontana et al. Given this agreement that summary writing is a superior way of assessing and developing these skills one of ordinary skill in the art would be motivated to modify the Fontana et al system so as to assess these skills in this superior manner.

Further, Fontana et al fails to specifically teach that the instructional passages have predetermined levels of difficulty (claims 1 and 18); a semantic space method means for receiving a summary prepared by the student and submitted via the computer system of on of said instructional passages read by the student said semantic space method means being adapted to automatically evaluate the summary for congruence with said one of said instructional passages and to automatically determine which of said instructional passages from said domain of discourse the student should read next based on the congruence of the summary with said one of said instructional passage (claims 1 and 18); that the feedback is indicative of the congruence of the summary with said one of said instructional passages (claims 1 and 18); audible receiving the summary or other input from the user (claims 24, 40); and an explicit teaching that the response is written (claim 39).

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Berman teaches a system which grades a user constructed response based upon the similarity between a user response and a model response. This system is essentially similar to the "semantic space method means" which makes a scoring decision based upon congruence (similarity). The specific method is taught in Figures 3A and 3B. The semantic spaces (as described in claims 2, 18, and 25) are deemed to be equivalent in function to the adaptive nature of the Berman system. This feature is taught as the "evaluation control program" as it is described throughout the Berman specification. The semantic space being derived from the latent semantic analysis using a latent semantic analysis algorithm (claim 19 and similar intended limitations of claim 3) is indicative of the method described in col. 4: 37-48. A semantic space algorithm operating on a semantic space (claim 22) is inherent to the proper functionality of a semantic based system. Berman teaches feedback given to the user, which is indicative of the congruence of the summary with said one of the instructional passages, (correctness of the response) in at least col. 5: 5-21. Berman teaches both audible input and written responses of a user in col. 4: 8. It would have been obvious to one of ordinary skill in the art to further modify the Fontana et al system with the constructed response grading system of Berman so as to allow for an efficient manner of evaluating the student response while still providing a more reliable overall assessment of the student's knowledge, see Berman col. 1: 29-33.

Regarding claim 23 and 37, the claims are deemed to be a method of use of the systems as described in at least claims 1 and 18. For purposes of brevity the examiner is not reciting each limitation herein. Fontana et al teaches the specific method of use, including the selection of a source, displaying of the source on a computer screen, and preparation/selection of responses in at least col. 10: 49-57. Berman teaches the specific method of using the system in Figures 3A and 3B. The claims are rejected for the same reasons of obviousness as set forth above.

The examiner notes that neither the Fontana et al nor the Berman patents teaches that the domain of discourse content have a varying degrees of difficulty, as recited in claims 1, 18, 23, and 37. The examiner takes Official Notice that it is old and well known in the area of adaptive educational systems to include questions, topics, or content at a variety of difficulty levels so as to allow the system to

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adapt the content presented to the user's learning level. Given this it would have been obvious to one of ordinary skill in the art to include this feature into either the Fontana et al or Berman systems.

***Allowable Subject Matter***

5. Claims 5-17, 26-36, 38, and 41-44 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Wallace et al (US 2002/0160347 A1) teaches an adaptive test taking system
- b. Burstein et al (US 6115683, 6181909 B1, 2002/0142277 A1, and 6366759 B1) teach various methods for the computer grading of essays
- c. Manning (US 4547161) teaches Cloze-elide testing procedures
- d. Fiedorowicz teaches a method of teaching reading including the use of cloze assessments
- e. Breland et al (US 6254395 B1) teaches the testing of reading skills using fill-in the blank type philosophies
- f. Bishop et al (US 4958284) teaches the computer analysis of open-ended question responses

7. If a copy of a provisional application listed on the bottom portion of the accompanying Notice of References Cited (PTO-892) form is not included with this Office action and the PTO-892 has been annotated to indicate that the copy was not readily available, it is because the copy could not be readily

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obtained when the Office action was mailed. Should applicant desire a copy of such a provisional application, applicant should promptly request the copy from the Office of Public Records (OPR) in accordance with 37 CFR 1.14(a)(1)(iv), paying the required fee under 37 CFR 1.19(b)(1). If a copy is ordered from OPR, the shortened statutory period for reply to this Office action will not be reset under MPEP § 710.06 unless applicant can demonstrate a substantial delay by the Office in fulfilling the order for the copy of the provisional application. Where the applicant has been notified on the PTO-892 that a copy of the provisional application is not readily available, the provision of MPEP § 707.05(a) that a copy of the cited reference will be automatically furnished without charge does not apply.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kathleen M Christman whose telephone number is (703) 308-6374. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teresa Walberg can be reached on (703) 308-1327. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.



Kathleen M. Christman



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